

ComEd

An Exelon Company

powering lives



ComEd 2019 Summer Preparedness ICC Policy Session June 26, 2019

2018 Highlights

Operational Highlights

Safety: Top quartile OSHA Recordable rate

Reliability: Over 60% improvement compared to pre-EIMA (2007-2011 avg)

- 3.2M customers had 0 or 1 interruption, best on record
- Lowest number of Customers Experiencing Multiple Interruptions (CEMI 4 & CEMI 7)
- Lowest reliability complaints, 81% favorable to pre-EIMA
- Largest winter storm since 1998 impacted ~300K customers in November

EIMA: Met all EIMA metrics for second consecutive year

- Completed AMI deployment with 4.1M+ meters installed
- Avoided ~4.9M customer interruptions, 144.7M manual meter reads, 1,367K truck rolls (\$105 million in avoided costs) since EIMA started
- Consumption on Inactive Meters (CIM) favorable to target by ~224k MWh
- Helped Illinois earn second spot in the Grid Modernization Index for fourth consecutive year, tied for first in Grid Ops

Diverse spend: \$718M, 39% of total – highest percentage ever



Looking to the Future

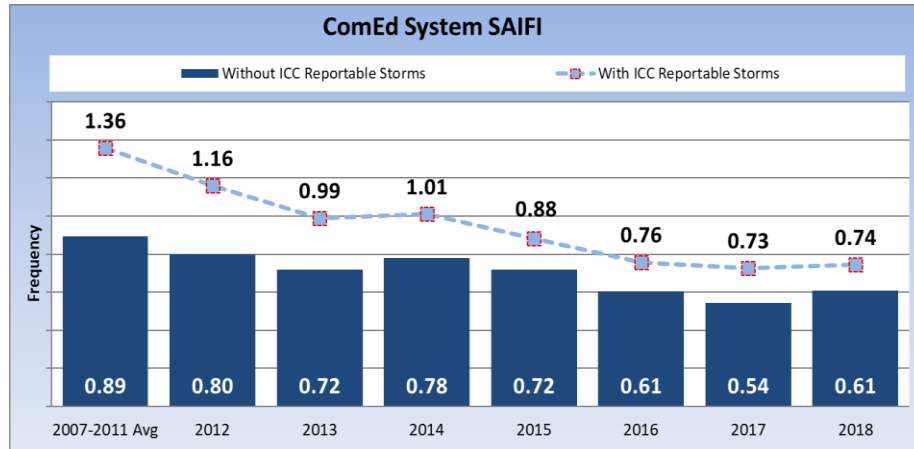
Future Energy Jobs Act: Energy efficiency, voltage optimization, solar, workforce development

Innovation: Shaping the future through the Bronzeville microgrid, smart streetlights, electric vehicle charging, water energy nexus and advanced energy efficiency technologies

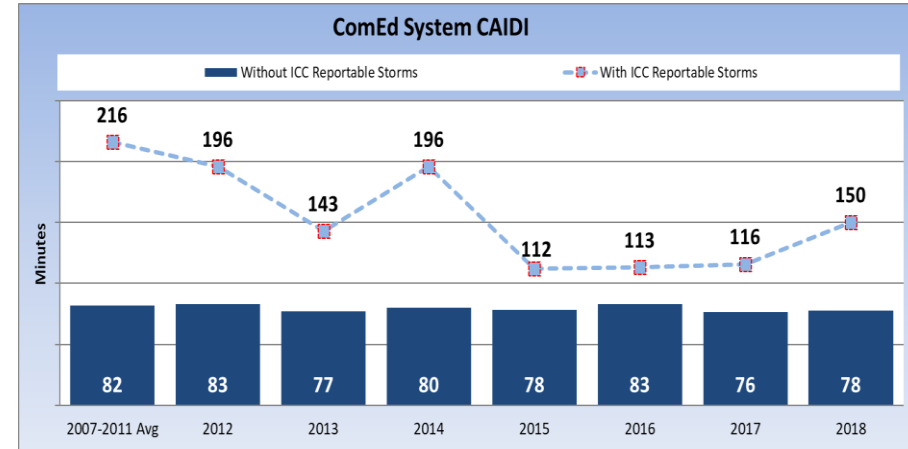
"EIMA" – Energy Infrastructure Modernization Act

Reliability Trends

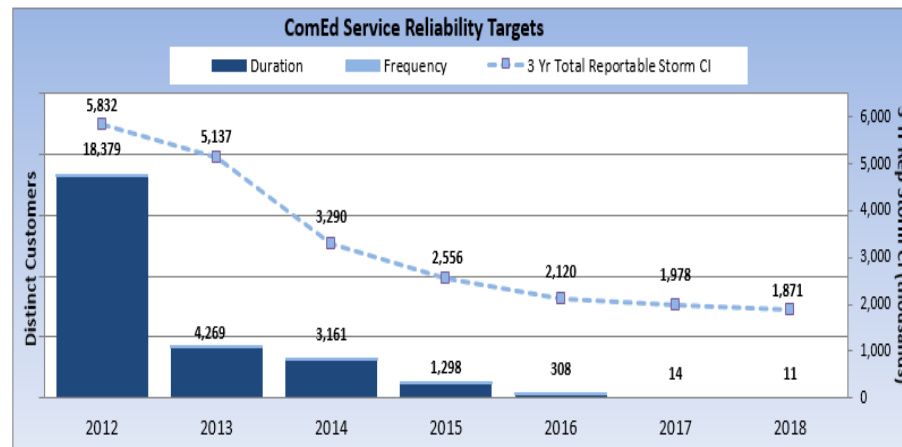
45% Improvement in Customer Interruptions or SAIFI



30% Improvement in Outage Duration or CAIDI



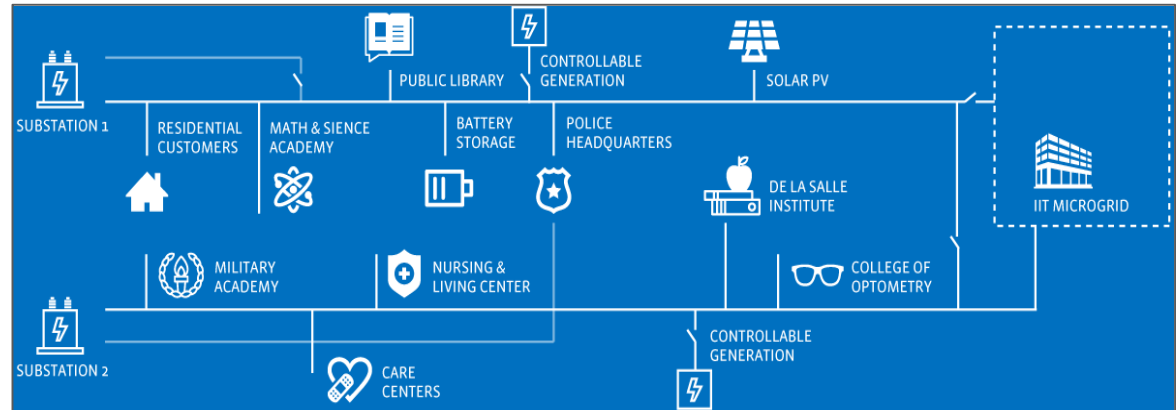
99.9% Improvement in Service Reliability since EIMA began



Improving Reliability and Resiliency through System Enhancements

Bronzeville Community Microgrid

- Completed simulated island test of Phase 1 per the Department of Energy requirement
- Launched multiple STEM initiatives in 2018 as part of our Community of the Future Efforts including ComEd HFS Scholars STEM Program, Dunbar Energy Academy, Solar Spotlight, & Community of the Future Ideathon



Major Reliability Projects Completed

- Removed 1,440 transmission wood structures since 2014 and replaced with steel structures
- Completed a 11-mile transmission line rebuild project in the Rock Falls Area in December 2018
- Completed digitizing relays for all 345kV transmission lines in 2018 which increased communication and allowed for remote monitoring and early detection of deficiencies
- Completed major project work at five substations since 2018 which increased reliability

Reliability Targeted Solutions & Smart Grid Work Completed since 2012

- Completed over 400 miles of storm hardening and grid resiliency solutions and 1,100 miles of enhanced vegetation reducing the impact from major storms and extreme weather
- Installed over 3,600 “smart switches” that automatically reroute power around potential problem areas
- Completed 11 smart substation upgrades allowing for remote monitoring and early problem detection

Prepared for Summer 2019

ComEd Well Positioned to Provide Reliable Service During the Summer

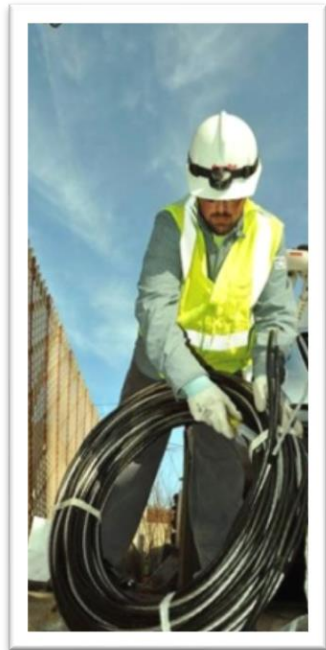
- PJM's 90/10 summer peak load forecast for ComEd: 24,012 MW
- Demand response programs, spare equipment and contingency/flood mitigation plans in place
- Prior to summer, completed:
 - 182 Transmission & Distribution Summer Capacity Expansion projects
 - Summer system maintenance on Distribution Capacitor/Regulator inspections
- Storm Task Force driving eighth year of continuous improvements
- Annual emergency response training and exercises completed by May 19

2019 Load Performance Forecast

- No transmission facilities projected to be loaded above 100% of applicable ratings under normal summer peak scenarios
- No distribution substations projected to be loaded greater than 100% of applicable ratings under "worst case" summer peak scenarios
- No distribution circuits projected to be loaded greater than 105% of ratings under "worst case" summer peak scenarios

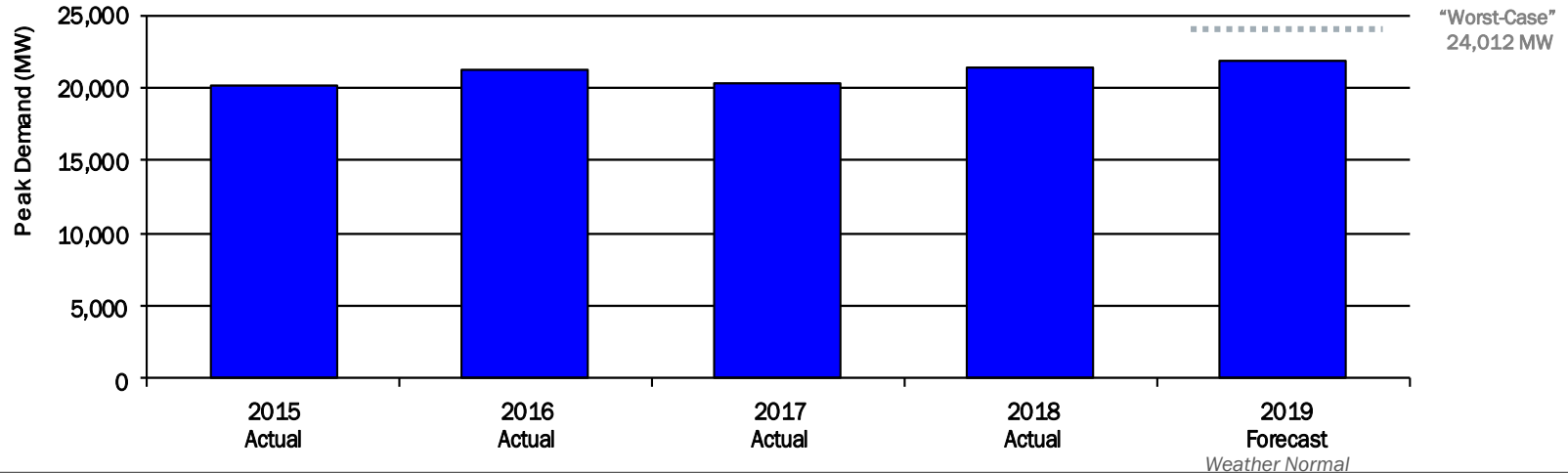
2019 Summer Forecast (Climate Prediction Center)

- Near normal temperatures for June, July and August
- Near normal precipitation (10.6 in.)



Transmission & Substation Adequacy

ComEd All-Time System Peak was 23,753 MW in 2011



Transmission & Substation Supply Exceeds Forecasted Demand

- PJM forecasted peak load is 24,012 MW (90/10), 21,890 MW for normal weather (50/50)

Demand Response

- **Demand Response** potential peak hour reduction is 1,151 MW for 2019
- **Peak Time Savings** program has grown by 7% from 2018 to more than 290,000 participants providing approximately 86 MW of demand response; expanding the program by over 10% from 2018
 - Paid \$3.16M to program participants in 2018
- 97,000 customers enrolled in **AC Cycling Program**, providing potential peak hour reduction of 97 MW
 - 28,000 have Smart Thermostat option using their Nest (28 MW)
 - 69,000 have Direct Load Control option (69 MW)

Emergency Preparedness

Storm Response Improvement

2019 Storm Improvement Taskforce target areas: emergency response readiness and damage assessment

2018 Mutual Assistance

Notable events:

- **Puerto Rico:** Deployed 145 employees over two waves in March & April 2018. Worked alongside the other Exelon Utilities (EU), totaling over 290 employees.
- **Winter Storm Riley:** Deployed 383 Contractor and 200 ComEd Overhead Line workers to EU OpCos in March 2018
- **Winter Storm Toby:** Deployed 200 Contractor Overhead Line workers to EU OpCos in March 2018

Winter Storm Bruce: Mutual Assistance to ComEd

- Northern parts of territory saw 9" to 13" of heavy wet snow, over 1" of ice accretion (worse since 1998) and extended period of wind gusts over 50 mph
- 3,200 outages impacted approximately 297,000 customers Nov. 25-29.
- Imported 383 Contractor and Mutual Assistance Crews (approx. 1,100 employees)
- EU OpCos supported with mobilization of approximately 470 utility and contractor employees
- Additional support provided via mutual assistance groups: GLMA, MMAG, SEE and North Atlantic Mutual Assistance Group



Emergency Preparedness Operational Exercises

ComEd hosted “Operation Power Play 2019” – fourth iteration of Statewide Exercise

- Multi-jurisdictional and multidiscipline collaborative effort sponsored by ComEd, Ameren Illinois, MidAmerican Energy, Argonne National Laboratory, the City of Chicago’s Office of Emergency Management and Communications, the Illinois Emergency Management Agency, DuPage County Office of Homeland Security and Emergency Management, and Illinois Tech.

May 22 Exercise Scenario:

Operations-based exercise simulating response to multiple tornadoes and major flooding throughout Illinois from severe storm event. A simulated coordinated cyberattack also impacted several utilities and private sector partners.

Loadshed Preparedness

- Conducted PJM Load Shed Drills on 1/13, 2/10, and 4/7
- Completed Load Shed education of all counties in service territory in 2018
- Conducting workshop with the City of Chicago in 2019

Joint Illinois Partnership:

- Continue regular meetings with Ameren and MidAmerican Energy to share emergency response best practices

ICC Communications Exercise (Dec 6, 2018)

- Helped design and facilitate 2nd annual Cyber & Communications joint exercise focusing on communications around a cyberattack on Illinois utilities

Contingency Planning

Emergency Equipment Ready and Available for Storm Season

- Seven Mobile Transformers
- 2 MW generators – 17 ComEd-owned units, with additional on standby with vendor
- 36 portable residential generators
- Spare transformer fleet includes 66, 33–333 MVA transformers

Supply Readiness

- Restocking Mobile Storm Trailers following every event
- Summer Readiness items (storm kits, transformers, wire/cable) verified at stocking levels and key suppliers have ramped up their 'stock-on-hand' for summer-related items

Substation Flood Mitigation Plans

- Permanent flood mitigation measures are in place at six flood prone substations, with one additional substation in progress to complete in 2019



Portable transformer at substation deployment exercise



North Chicago Substation during flood event

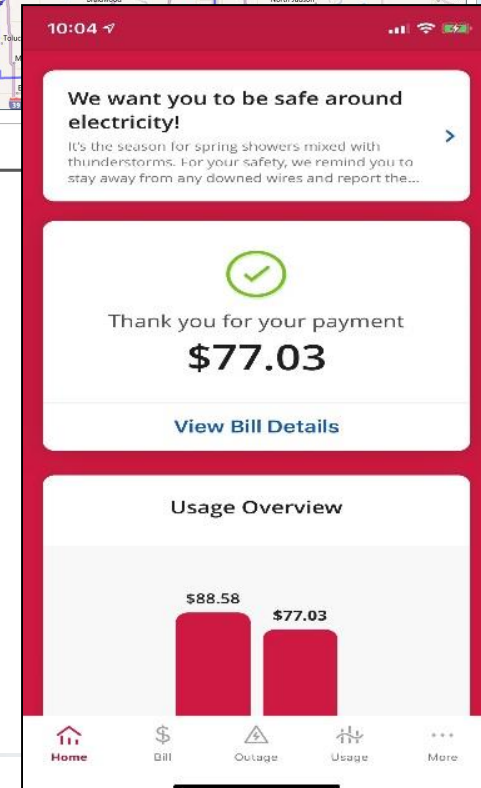
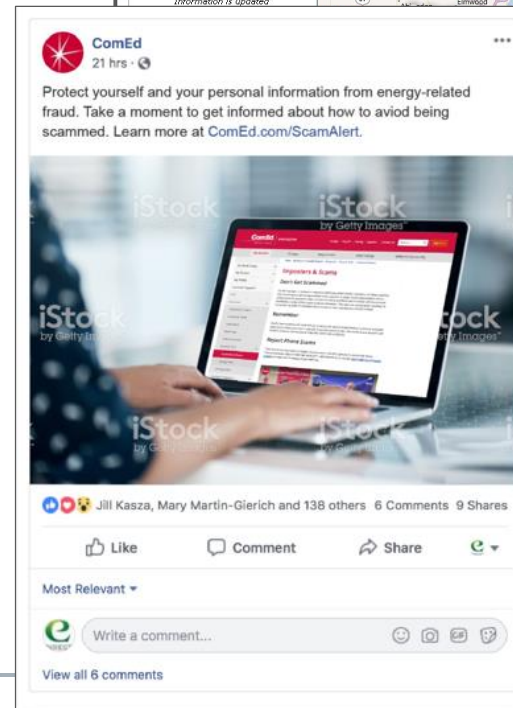
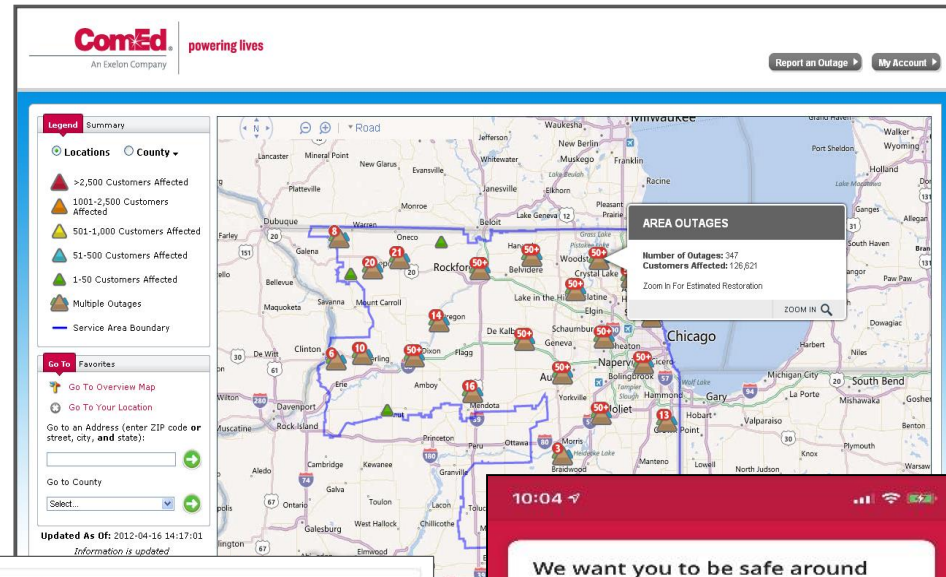
Customer Communication and Engagement

Call Center and Outreach

- Conducted storm preparedness drill to improve outage reporting
- Enhanced ComEd website, phone system and mobile apps to improve customer experience
- Deployed digital channel readiness process for storm to ensure website and mobile apps readily available
- Over 1 million customers enrolled in outage notifications via text, phone, email or mobile apps
- Strengthened Outage Map and Municipal Portal to increase system reliability and mitigate downtime

Powering People

- April 2019, we launched our Powering People campaign that builds on our customer assistance program dedicated to inform, empower, and assist most vulnerable customers



Future Energy Jobs Act (FEJA)

Voltage Optimization

- Activated Voltage Optimization on 60 substations and 286 feeders since 2018
- In 2018 the Voltage Optimization program provided over 66M kWh of energy savings, this is equivalent to ~103M pounds of Carbon Dioxide or removing ~9,900 passenger vehicles driven each year

Energy Efficiency Programs:

- Invested over \$351M and exceeded 1.71M MWh annual energy savings goal in 2018
 - Provided over 235,000 homeowners with rebates
 - Served over 43,000 homes with free assessments and income eligible (IE) upgrades
 - Selected 13 R&D pilots and research projects for IE customers
- Committed to a 10% increase in diversity-certified supplier spend in 2019
- Launched 11 third party programs in Q1 targeting underserved customer segments totaling \$25M and 80 GWh of savings



Future Energy Jobs Act (FEJA)

Solar

- Received 4,500 interconnection applications representing 1,655 MW of new solar generation in 2018
 - Connected 1,080 applications representing 14.99 MW of new solar generation in 2018
- Issued over \$2.5M in Distributed Generation Rebates; equivalent to over 10 MW of installed capacity
- Community solar Adjustable Block Program post-lottery re-evaluation underway
 - 438 Community Solar Projects entered lottery for ComEd service area, 78 won
- Launched Digital Solar Toolkit in December 2018
- Posted first Hosting Capacity maps to ComEd.com providing customers information on distributed energy resources

Workforce Development

- Funded Workforce Development Training Programs in late 2017 for four-year period; programs launched in 2018 and continue through 2020
 - Provided combined \$10M in grants to 11 nonprofits to implement training in three categories: Solar Pipeline, Multicultural and Craft Apprenticeships
- More than 200 participants trained in 2018; increase expected in 2019 as the program continues to expand across the state



ComEd is Prepared

Ready to provide reliable electric service to customers during the summer months

Transmission and Distribution facilities ready to meet 2019 Forecasted Load

Completed significant summer capacity expansion projects, reliability improvement and other summer investment projects by summer

Completed storm response improvements, preparedness drills and exercises to ensure readiness for summer

Customer service channels ready to respond to customer inquiries

Questions?

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